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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/663,594	09/18/2000	Wolfgang O. Budde	PHD 99,127	4059

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EXAMINER

BATES, KEVIN T

ART UNIT	PAPER NUMBER
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2155

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/663,594	Applicant(s) BUDDÉ ET AL.	
	Examiner Kevin Bates	Art Unit 2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14-17 and 19-22 is/are rejected.
- 7) ☒ Claim(s) 13, 18, and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

This Office Action is in response to a communication made on January 28, 2006.

Claims 12-20 are newly added.

Claims 1-20 are pending in this application.

Claim Objections

Claim 19 is objected to because of the following informalities: claim 19 is listed as being dependent upon itself. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1-3, 5-8, 10-12, 14-17, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Shimizu (4866702).

Regarding claim 1, Shimizu teaches a network comprising:

a plurality of network nodes, (Column 3, lines 60 – 64) and

a star node that is configured to be coupled to the plurality of network nodes to facilitate communication among the plurality of network nodes (Column 3, lines 60 – 64), wherein:

the star node includes a plurality of star interface each star interface of the plurality of star interfaces being assigned to at least one network node of the plurality of network nodes (Column 3, lines 63 – 66), and

each star interface is configured in such that in dependence on detection of a pilot signal from an assigned network node (Column 2, lines 30 – 48; Column 4, lines 5 – 7; lines 15 – 21, where the pilot signal is a combination of a timing circuit meant to control the time slots and an active signal to indicate whether the bus is being used or not) star interface that is assigned to the assigned network node autonomously controls the conveyance of a message from the assigned network node to the other star interfaces and therefrom to the other network nodes (Column 1, lines 37 – 40, where the arbiter is an assigned node to handle assigning the right to use the data bus for the terminals to send messages).

Regarding claim 2, Shimizu teaches a network as claimed in claim 1, wherein each network node is assigned a periodically recurrent time section for the transmission of its messages (Column 2, lines 42 – 45), and

a each network node includes a pilot signal generator that is configured to generate a pilot signal that identifies the time section to the assigned star interface (Column 2, line 57 – 58; Column 7, lines 50 – 55).

Regarding claim 3, Shimizu teaches a network as claimed in claim 1, wherein each star interface includes:

a first and second switch element and a pilot signal detector,

the first switch element is configured to allow a message to pass from the assigned network node to the other star interfaces (Column 7, lines 26 – 49) and

the second switch element is configured to allow a message to pass from the other star interfaces to the assigned network node (Column 5, lines 47 – 61); and

the pilot signal detector is configured to selectively control the first and second switch elements based upon detection of a pilot signal from the assigned network node (Column 8, line 57 – Column 9, line 25).

Regarding claim 5, Shimizu teaches a network as claimed in claim 1, wherein a star interface is configured to generate a release signal upon receipt of a pilot signal from the assigned network node, and

the start node is configured to propagate the release signal to the plurality of star interfaces (Column 4, lines 14 – 21, where the line goes idle or busy).

Regarding claim 6, Shimizu teaches a network as claimed in claim 5, wherein the star node is configured to propagate the release signal via a wired OR combination of the release signal from each star interface (Column 2, line 49 – Column 3, line 9).

Regarding claim 7, Shimizu teaches a network as claimed in claim 2, wherein at least one network node is assigned to more than one star interfaces of which only one star interface is enabled to communicate messages in dependence on a state of the assigned network node (Column 10, line 60 – Column 11, line 25).

Regarding claim 8, Shimizu teaches a network as claimed in claim 7, wherein the at least one network node includes:

at least two pilot signal generators and

at least two multiplexers for combining the pilot signal generated by the assigned pilot signal generator with a message (Column 10, lines 23 – 34), and

a control unit that is configured to select a line connection and an assigned star interface for transmitting the message combined with the pilot signal (Column 7, lines 50 – 68).

Regarding claim 10, Shimizu teaches a network node in a network that includes a plurality of other network nodes, comprising:

a pilot generator that is configured to generate a pilot signal that serves to identify a time frame within which a message is to be transmitted from the network node (Column 2, lines 30 – 48; Column 4, lines 5 – 7; lines 15 – 21, where the pilot signal is a combination of a timing circuit meant to control the time slots and an active signal to indicate whether the bus is being used or not),

a multiplexer, operably coupled to the pilot generator, that is configured to multiplex the pilot signal and the message to produce an output signal (Column 2, lines 35 – 41), and

a transmitter operably coupled to the pilot generator, that is configured to transmit the output signal (Column 2, lines 30 – 48; Column 4, lines 5 – 7; lines 15 – 21), wherein

the network node is configured to be coupled to the network via a star node that communicates the output signal to each of the other network nodes based on a detection of the pilot signal (Column 3, lines 60 – 66).

Regarding claim 11, Shimizu teaches a star node in a network for coupling a plurality of network nodes, comprising:

a plurality of star interfaces, each star interface of the plurality of star interfaces being assigned to at least one network node of the plurality of network nodes (Column 3, lines 60 – 64), wherein

each star interface is configured to:

detect a pilot signal generated by a network node that is assigned to the star interface (Column 2, lines 30 – 48; Column 4, lines 5 – 7; lines 15 – 21, where the pilot signal is a combination of a timing circuit meant to control the time slots and an active signal to indicate whether the bus is being used or not), and autonomously control each of the other star interfaces to enable transmission of a message associated with the pilot signal to each of the other network nodes in the network (Column 1, lines 37 – 40, where the arbiter is an assigned node to handle assigning the right to use the data bus for the terminals to send messages).

Regarding claims 12 and 16, Shimizu teaches the star node of claims 1 and 11, wherein each star interface is selectively operable in one of a receive mode and a transmit mode, and each star interface includes

a pilot detector that is configured to detect the pilot signal and selectively set its interface to receive mode, and each of the other star interfaces to transmit mode, wherein (Column 2, lines 30 – 48; Column 4, lines 5 – 7; lines 15 – 21, where the pilot signal is a combination of a timing circuit meant to control the time slots and an active signal to indicate whether the bus is being used or not)

in the receive mode, the star interface is configured to receive messages from its assigned one or more network nodes (Column 5, lines 21 – 31), and

in the transmit mode, the star interface is configured to transmit messages to its assigned one or more network nodes (Column 4, lines 27 – 33).

Regarding claim 14, Shimizu teaches the network node of claim 10, wherein the multiplexer includes one of: a time-division multiplexer, a frequency-division multiplexer, and a phase-division multiplexer (Column 2, lines 35 – 38).

Regarding claims 15 and 17, Shimizu teaches the network of claims 2 and 16, wherein the pilot signal includes one of; a signal that is time-division multiplexed with the message, a signal that is frequency-division multiplexed with the message, and a signal that is phase-division multiplexed with the message (Column 2, lines 42 – 48).

Regarding claim 19, Shimizu teaches the network of claim 19, wherein the pilot output of all of the star interfaces are commonly and directly coupled to the pilot input of all of the star interfaces (Figure 1, elements 2-1 through 2-n).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu in view of Kobayashi (4,694,453).

Regarding claim 4, Shimizu teaches a network as claimed in claims 3.

Shimizu lacks the idea that the first and second switch elements are each a switchable amplifier.

Kobayashi ('453) teaches a star node and a star interface that has an amplifier for adjusting signals on the upstream and downstream (Figure 5, label 12 and 20) before the switched input to the necessary voltages so that signals can be read correctly (Column 4, lines 21 – 23). So Kobayashi ('453) teaches the idea that the first and second switch elements are each a switchable amplifiers.

It would have been obvious at the time the invention was made to use Kobayashi's amplifiers in order to have an element to ensure that the signals that each of the star interfaces were sending and receiving were of the proper voltage.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu in view of Schenkyr (5,218,600).

Regarding claim 9, Shimizu teaches a network as claimed in claim 8, wherein the at least one network node includes one or more pilot signal detectors, and the control unit is configured to test communications over the network based on detection of received pilot signals at each of the more than one star interfaces (Column 8, lines 33 – 47).

Shimizu does not explicitly indicate that the control unit is provided for testing the operability of the star interfaces, of the line connections, and of a circuit component in the network node.

Schenkyr teaches scanning for interruption of a connecting line or a node failure in a network system (Column 2, lines 16 – 19) by using empty signals to monitor the line (Column 1, lines 55 – 57). So Schenkyr teaches the idea of testing the operability of the star interfaces, of the line connections, and of a circuit component in the network node.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add Schenkyr's ideas of monitoring the state of the network so that the system can know of a problem and attempt to compensate (Column 2, lines 16 – 24).

Allowable Subject Matter

Claims 13, 18 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The Primary reason for allowance is that the examiner has found that the prior art of record does not teach or suggest or render obvious a network or star node using pilot signals and star interfaces for controlling the conveyance of messages based on the pilot signal generated by a network node that is assigned to the star interface, where each star interface has an input and output pilot signal and each signal are coupled to an assigned node and each star node also has an input and output connection connected to the input and output of each other star interface.

Response to Arguments

Applicant's arguments filed January 28, 2006 have been fully considered but they are not persuasive.

The applicant argues that the reference, Shimizu, does not teach a pilot signal and that the pilot signal does not convey messages in the network. The examiner disagrees, a pilot signal is any signal that controls the other star interfaces in order to send messages over the network without conflicting. Shimizu teaches a signal that defines the time slot that messages should be transmitted (Column 2, lines 42 – 48), a signal that tells the terminals when they can start sending messages on the network (Column 4, lines 15 – 21) so the reference teaches a signal that tells the terminals when to send messages and helps them with a timing signal to send those messages, so there is a pilot signal which automatically controls the terminals on the network.

Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U. S. Patent No. 4352180 issued to Schulze, because it discloses multiple star interfaces that operate based on pilot signals.

U. S. Patent No. 4630254 issued to Tseng, because it discloses a star coupler with control logic.

U. S. Patent No. 6996115 issued to Budde, because it discloses a star interface with a pilot signal.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Bates whose telephone number is (571) 272-3980. The examiner can normally be reached on 8 am - 4:30 pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on (571) 272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2155

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KB

KB
April 14, 2006


SALEH NAJJAR
SUPERVISORY PATENT EXAMINER